

What Is Claimed Is:

1 1. A method of determining a track pitch of a disc in a
2 disc drive, comprising the steps of:

3 reading first time information and counting a first frame
4 count of one revolution at a predetermined first
5 position with a first radius to the center of the
6 disc;

7 reading second time information and counting a second frame
8 count of one revolution at a second position with a
9 second radius to the center of the disc;

10 calculating the second radius according to the first frame
11 count, the second frame count and the first radius;
12 and

13 calculating a track pitch of the disc according to the first
14 radius, the second radius, the first time
15 information, the second time information and a linear
16 velocity of the disc drive.

1 2. The method as claimed in claim 1 wherein the first
2 radius is the distance from a beginning position of a data area
3 of the disc to the disc center.

1 3. The method as claimed in claim 1 wherein the second
2 radius is calculated according to the following equation,

3
$$r_1 = \frac{F_1}{F_0} \times r_0,$$

4 wherein r_1 is the second radius, r_0 is the first radius,
5 F_0 is the first frame count, and F_1 is the second
6 frame count.

1 4. The method as claimed in claim 1 wherein the first time
2 information and the second time information are recorded in
3 Q-Code.

1 5. The method as claimed in claim 1 wherein the track
2 pitch is calculated according to the following equation,

3
$$p = \frac{\pi r_1^2 - \pi r_0^2}{(N_1 - N_0) \times 60 \times v},$$

4 wherein p is the track pitch, r_0 is the first radius, r_1
5 is the second radius, N_0 is the first time
6 information, N_1 is the second time information, and
7 v is the linear velocity.

1 6. A disc drive, comprising:
2 an optical head; and
3 a processor used to perform the steps of:
4 moving the optical head to a first position with a first
5 radius to the center of a disc;
6 reading first time information and counting a first frame
7 count of one revolution;
8 moving the optical head to a second position with a second
9 radius to the center of the disc;
10 reading second time information and counting a second frame
11 count of one revolution;
12 calculating the second radius according to the first frame
13 count, the second frame count and the first radius;
14 and
15 calculating a track pitch of the disc according to the first
16 radius, the second radius, the first time

Client's ref.: 91101US
Our ref.: 0660-9351-USf/Yianhou/Kevin

17 information, the second time information and a linear
18 velocity of the disc drive.

1 7. The disc drive as claimed in claim 6, wherein the first
2 radius is the distance from a beginning position of a data area
3 of the disc to the disc center.

1 8. The disc drive as claimed in claim 6 wherein the second
2 radius is calculated according to the following equation,

$$3 \qquad \qquad r_1 = \frac{F_1}{F_0} \times r_0 ,$$

4 wherein r_1 is the second radius, r_0 is the first radius,
 5 F_0 is the first frame count, and F_1 is the second
 6 frame count.

1 9. The disc drive as claimed in claim 6 wherein the first
2 time information and the second time information are recorded
3 in Q-Code.

1 10. The disc drive as claimed in claim 6 wherein the track
2 pitch is calculated according to the following equation,

$$3 \quad p = \frac{\pi r_1^2 - \pi r_0^2}{(N_1 - N_0) \times 60 \times v},$$

4 wherein p is the track pitch, r_0 is the first radius, r_1
 5 is the second radius, N_0 is the first time
 6 information, N_1 is the second time information, and
 7 v is the linear velocity.

1 11. A method for determining disc track pitch, for use in
2 a disc device, comprising the steps of:

3 counting a first frame count of one revolution
4 corresponding to a first position with a first radius

Client's ref.: 91101US
Our ref.: 0660-9351-USf/Yianhou/Kevin

5 to a center of a disc, in which the first radius is
6 the distance from a beginning position of a data area
7 of the disc to the disc center;
8 counting a second frame count of one revolution
9 corresponding to a second position with a econd radius
10 to the center of the disc;
11 calculating the second radius according to the first frame
12 count, the second frame count and the first radius;
13 reading second time information of the second position; and
14 calculating a track pitch of the disc according to the first
15 radius, the second radius, the second time
16 information and a linear velocity;
17 wherein the first radius is the distance from a beginning
18 position of a data area of the disc to the disc center.

1 12. The method for determining disc track pitch as claimed
2 in claim 11 wherein the second radius is calculated according
3 to the following equation,

$$4 r_1 = \frac{F_1}{F_0} \times r_0,$$

5 wherein r_1 is the second radius, r_0 is the first radius,
6 F_0 is the first frame count, and F_1 is the second
7 frame count.

1 13. The method for determining disc track pitch as claimed
2 in claim 11 wherein the second time information is recorded in
3 Q-Code.

1 14. The method for determining disc track pitch as claimed
2 in claim 11 wherein the track pitch is calculated according to
3 the following equation,

Client's ref.: 91101US
Our ref.: 0660-9351-USf/Yianhou/Kevin

4
$$p = \frac{\pi r_1^2 - \pi r_0^2}{N_1 \times 60 \times v},$$

5 wherein p is the track pitch, r_0 is the first radius, r_1
6 is the second radius, N_1 is the second time
7 information, and v is the linear velocity.

1 15. A method for determining disc track pitch, for use in
2 a disc device having an optical head moving according to a track
3 pitch, said method comprising the steps of:

4 counting a first frame count of one revolution
5 corresponding to a first position with a first radius
6 to a center of a disc;

7 reading first time information of the first position;

8 counting a second frame count of one revolution
9 corresponding to a second position with a second
10 radius to the center of the disc;

11 reading second time information of the second position;
12 calculating the second radius according to the first frame
13 count, the second frame count and the first radius;
14 and

15 calculating a track pitch of the disc according to the first
16 radius, the second radius, the first time
17 information, the second time information and a linear
18 velocity.